UNION CARBIDE

NUCLEAR DIVISION NEWS

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 5 — No. 5 March 7, 1974

QUESTION BOX

If you have questions on company policies, benefits, etc. or any other problems with which we might help, just let us know. Drop your inquiry to the Editor, Nuclear Division News. *(Or telephone it in to your plant news representative.) You may or may not sign your name. It will not be used in the paper.*

Questions are referred to the proper authorities for accurate answers. Each query is given serious consideration for publication.

Answers may be given to employees personally if they so desire.

QUESTION: As I understand the various provisions of our Savings Plan, there are options open to us to vary in several ways the manner in which the funds may be invested, and furthermore certain changes may be made from time to time, if desired.

One factor influencing such changes obviously is how the various parts of the plan are performing. This question is easily answered for all but the Equity Investment Fund, and for this we have been given no current information at all.

Would it be possible to obtain periodically a figure for the value of a unit in this fund?

I would call to your attention the fact that General Electric has a similar plan, and the value of their shares are quoted daily along with many other mutual funds. I would be quite satisfied if our data could be furnished, say monthly. I am not asking for a statement of individual accounts, just the value of a single share or unit.

ANSWER: The need for information about the value of units in the Equity Investment Fund and the Fixed Income Fund, as well as the average purchase price for UCC stock, has been recognized for some time.

Arrangements have been made for these figures to be published in each edition of the Union Carbide **World** which is mailed to the home address of Nuclear Division employees monthly, except January and August. The February issue shows these values for August through December, 1973. Future issues will show the values for the four months preceding the month the Union Carbide **World** is issued.

All employees should be receiving the Union Carbide **WORLD.** If any employee is not receiving it, please advise your News Editor.

QUESTION: Personal leave, as I understand it, is that time afforded weekly and monthly personnel to take care of personal business (legal matters, funerals, doctors' visits, emergencies, etc.) which cannot be taken care of on off-duty hours. A special form, UCN-2592, Request for Absence Approval, is provided for weekly personnel to report any personal leave which necessitates his being away from work. However, it is my understanding that this form is not used in all divisions, and that some weekly employees simply relate to their supervisors their need to take personal leave - for personal business! Within my division at ORNL, this form must be filled out completely by the employee (including why it is necessary to be absent), approved by his/her supervisor, and sent to the division director (who evidently disposes of it as he sees fit since it does not go to timekeeping).

Is this a Laboratory-wide procedure, or does lab management leave it to the discretion of each division director whether or not this procedure is necessary? If the latter is true, wouldn't it be more fair to all employees to standardize whichever procedure will be used? Also, why is it that monthly employees can simply take personal leave without having to explain why, when or where? Weekly employees who have to fill out these forms tend to feel a little like school children bringing a note from home to the teacher. Is there any way that this situation can be equalized?

ANSWER: The form you refer to has been used in some divisions but has not had Laboratory-wide usage. As a result of your question, the matter has been reviewed by the divisions which were using the form. They have concluded that face-to-face discussions are more appropriate for personal leave requests and an employee will not be asked to complete the form in the future.

Employees on all payrolls, monthly and weekly salaried as well as hourly, must obtain permission from their supervisors in connection with personal leave.

QUESTION: Why not continue the ORNL safety award drawings for large gifts? That certainly drew interest and had more popular support than 358 $18.75 bonds will. Your gripes came from a very vocal and extremely small minority. I suspect that most employees

(Continued on page 8)

Energy conservation measures begin to show positive results

How are energy conservation measures working in the Nuclear Division?

Carl Peterson, coordinator of the Energy Conservation Committee, has provided usage figures for January, 1974, and has compared them with the same month a year ago. Substantial savings have been noted in all fields.

The use of electricity has been curtailed in all four plants operated by the Nuclear Division: 11.2 percent at the Oak Ridge Gaseous Diffusion Plant, from 5,461 megawatt hours to 4,850; 16.1 percent at the Oak Ridge National Laboratory, from 14,605 to 12,249; down 11.9 at the Y-12 Plant, 49,408 to 43,516; and down 6 percent at the Paducah Plant, 1,306 down to 1,141.

Natural gas consumption is down also in the four complexes: down 7 percent at ORGDP, from 4,300 cu. ft. to 4,000; down 25.4 at ORNL, from 118.700 cu. ft. to 88,600; down 42 percent at the Y-12 Plant, from 3,100 cu. ft. to 1,800; and down 3 percent at the Paducah Plant, from 21,180 cu. ft. to 20,540.

ORGDP reduced its gasoline consumption by a factor of 3.5 percent, from 28,700 gallons to 27,700; ORNL, 3.4 percent, from 17,700 to 17,100; Y-12 down 27.3 percent, from 30,400 to 22.100. Paducah showed a slight gain, from 8,446 gallons to 8,938, due to an increase in plant population and number of vehicles in the plant's fleet.

A gasoline rationing system has been put into effect, involving the use of ration tickets in divisions throughout the plants. Employees are also being urged to make better use of the improved bus schedules, as well as the shuttles between the plants, and the ones operating to the Atomic Energy Commission offices and Purchasing, Townsite.

Fuel oil consumption at ORNL fell by 97.4 percent, from 7,800 gallons to 200; down 6.7 percent at Y-12, from 6,000 to 5,600; and down 3 percent at Paducah, from 36,590 to 35,500 gallons.

Diesel fuel usage fell at ORGDP by 43.3 percent, from 3,000 gallons to 1,700; at ORNL, 25 percent, from 2,400 to 1,800; at Y-12, 20.7 percent, from 5,800 to 4,600 gallons; and at Paducah, by 6 percent, from 3,030 to 2,840 gallons.

The coordinators from the individual plants include: Al M. Tuholsky, Paducah; Edward J. Witkowski, ORNL; George W. Oliphant, Y-12; and George L. Copeland, ORGDP. Each coordinator has an energy conservation team with division representatives from all over that plant.

The Energy Conservation Committee, with both short- and long-range ways to conserve on all forms of energy, compiles usage charts every month to plot its progress.

Thus far, it looks good.

Next Issue

The next issue will be dated March 21. The deadline is March 13.

"RATION COUPONS" — Cecil Redmon, Oak Ridge Gaseous Diffusion Plant, accepts gasoline coupons from "customer" Earl Campbell, right. Gasoline savings have been registered in the AEC plants, operated by Union Carbide Corporation.

ORNL assists T.V.A. study of waste hot water use

By Robert L. Wesley

Since 1970, Oak Ridge National Laboratory has been involved in studies to determine the feasibility of using some of the waste heated water from large nuclear and conventional power plants or industrial plants. One promising application is to heat and to cool (by evaporation) facilities for raising vegetables, fish, poultry and livestock.

Conceptual design studies and experiments related to this application have involved such persons as Sam E. Beall, Garland Samuels, Loyd V. Wilson, and William K. Furlong, Reactor Division; Mike I. Lundin, Engineering Division; and Eric A. Hirst, ORNL NSF-Environmental Program.

The first phase of the experimental work involved the operation of a small greenhouse owned by the Environmental Sciences Division at ORNL. The second was testing evaporative pads in a facility in a Reactor Division building at Y-12. The third phase of the project included the design of a 2500 square foot greenhouse built at the Tennessee Valley Authority's National Fertilizer Development Center at Muscle Shoals, Ala., and the evaluation of its performance, presently in progress.

TVA operates greenhouse

The greenhouse was constructed and is operated with TVA funds. ORNL contributions to the greenhouse project included the preparation of specifications for purchasing the external structure and internal components, engineering calculations for heating and cooling, design of the process flow systems and the recommendations for the control system design.

The greenhouse is a conventional aluminum-framed, glass-glazed structure. Water, warmed by an electric heater, flows over aspen fiber pads to heat the greenhouse in winter and cool it, by evaporation, in summer. The released heat is circulated by two propeller-type fans. Heating of the plant root zones can be accomplished by diverting warm water from the system just downstream of the hot water heater. This water flows through pipes buried about eight inches below the surface of the two rooting media - soil and pine bark/vermiculite mix. Temperature control of the house atmosphere is effected by changing the fan speed and by modulating the amount of air recirculated through the house.

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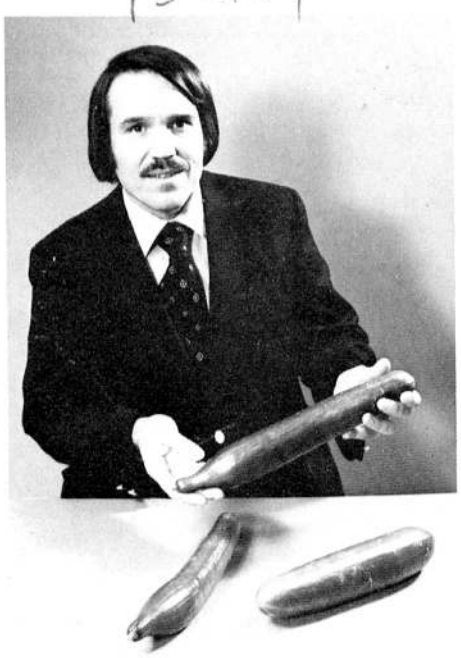


HEALTHY CUCUMBERS — Bill Furlong, Reactor Division, displays cucumbers grown in the joint Oak Ridge National Laboratory-Tennessee Valley Authority greenhouse project. The purpose of the project is to make use of waste heated water from both nuclear and conventional power plants.

Fall crop harvested

Construction of the greenhouse was completed last year and the initial crop of cucumbers was transplanted in early October. Harvest began in mid-November and continued through late January. Tomatoes were planted in January for a harvest in mid-April.

Bill Furlong, present coordinator of the ORNL portion of the study, said the Muscle Shoals greenhouse should be considered a pilot plant. If engineering and horticultural results are favorable, a larger demonstration unit might be constructed at the Browns Ferry Nuclear Plant near Decatur, Ala. That plant is scheduled to have three nuclear reactors, each producing 1,065,000 net kilowatts of electrical power. Along with the power generation will be the production of large quantities of waste heat energy - about two units of waste heat per unit of usable output as electricity.

Acreage reserved

TVA has reserved 180 acres within the Browns Ferry exclusion area for possible demonstration facilities using some of this waste water. Initially, this might include construction of a greenhouse, approximately one acre in size, for growing cucumbers, lettuce, tomatoes and possibly other crops. Other potential uses of waste warm water at this site include spray irrigation, soil heating and thermal enrichment of water for fish culture.

Furlong pointed out that although the small greenhouse at Muscle Shoals uses an electric heater to simulate waste heat, a larger facility located at the Browns Ferry plant would use condenser discharge water, which normally would go to cooling towers or be released to natural bodies of water.

Incentives for use

"There are several incentives for using this waste heat," Furlong explained. "One is the present escalation in the cost of propane, fuel oil and natural gas. Another is the public concern over the thermal effects of waste heat water released to the natural environment. The amount of waste heat released from American power plants in 1972 was equivalent to enough coal to fill a train about 75,000 miles in length or three times around the earth! If we can devise practical ways to use at least some of this heat, it should help to reduce pollution and conserve fuel. An agricultural complex would make use of this waste and help produce crops which could be sold and permit some cost recovery."

Furlong said the successful operation of a demonstration plant at a power or an industrial plant might interest private industry in the commercial feasibility of an agricultural complex. He said there is some evidence that the far northern states which experience severe winters might find the idea particularly useful.

TVA 154562

FOOD IN WINTER — Food grows in the winter in a greenhouse located at the Tennessee Valley Authority's Muscle Shoals, Ala., National Fertilizer Development Facility. Oak Ridge National Laboratory personnel assisted in the design of the process flow systems for the greenhouse experiment. (Photo courtesy of TVA.)

Greenhouse advantages

"A few years ago, it cost about $8,000 per acre per year to heat a greenhouse in Minnesota by using natural gas costing 50 cents per one-million Btu. With the recent rise in fuel costs, propane for greenhouse heating now costs over $3 per one-million Btu," Furlong said.

"Generally speaking, there are a number of other advantages to greenhouse horticulture. It becomes much easier to optimize growing conditions by controlling all the factors necessary to plant growth, particularly the temperature. Problems such as harmful insects, floods, drought, hail, etc., are all but eliminated, in addition to the obvious advantage of being able to harvest crops during winter months."

Unresolved questions

Furlong pointed out that there are several questions about large greenhouse operations which are difficult to answer at the present time. One is the ability to grow crops under the high humidity conditions necessary if the simple, inexpensive fiber pads are to be used for greenhouse heating. Other questions relate to the fact that a higher percentage of hand labor is required in greenhouses, as opposed to the mass planting, cultivating, pollinating and harvesting techniques used in open field agriculture. The optimum greenhouse size and number of workers has not been determined as yet, but Furlong is of the opinion that labor intensity will have to be reduced to make commercial greenhouses more economically feasible. At present, most greenhouses are family operations in the Tennessee Valley region.

He suggests that hydroponics - growing plants with their roots immersed in sand or gravel with aqueous solutions containing essential mineral nutrient salts, instead of soil - possibly may be one way of reducing labor costs. Another way might be to establish an "assembly-line" greenhouse where plants are cycled past a central work station.

Furlong optimistic

Despite the unsolved questions, Furlong is optimistic that the greenhouse and waste heat complex envisioned for the Browns Ferry Nuclear Plant can be a successful engineering and horticultural demonstration. The TVA already is helping to demonstrate the use of warm water from the Gallatin Steam Plant to raise catfish in concrete raceways. The fish-raising facility is a cooperative arrangement between an investor food company and TVA as heat supplier.

Waste heat also has been tested or is being used to raise catfish at Fremont, Neb. and Lake Colorado City, Tex.; oysters at Northport, Long Island, N.Y. and Humboldt Bay, Cal.; and shrimp at Crystal River, Fla. The University of Arizona has built and operated a diesel-powered plant and greenhouse for vegetables in a Mexican coastal town. Warm water has been used for spray irrigation since 1970 by the Eugene, Ore. Power and Water Board. Water from the Weyerhauser Paper Company plant was used there to irrigate fruit, nut and vegetable crops.

Furlong concluded, "Since these ideas appear to be proving successful in day-to-day operations, it is not difficult to imagine mammoth heat utilization complexes, centered about nuclear and conventional power plants, making use of some of the waste heat to environmentally condition greenhouses, facilities for raising fish, poultry and livestock, and for spray irrigation and soil heating for field crops."

Make yourself an honest person, and then you may be sure there is one less rascal in the world.

Y-12 PLANT

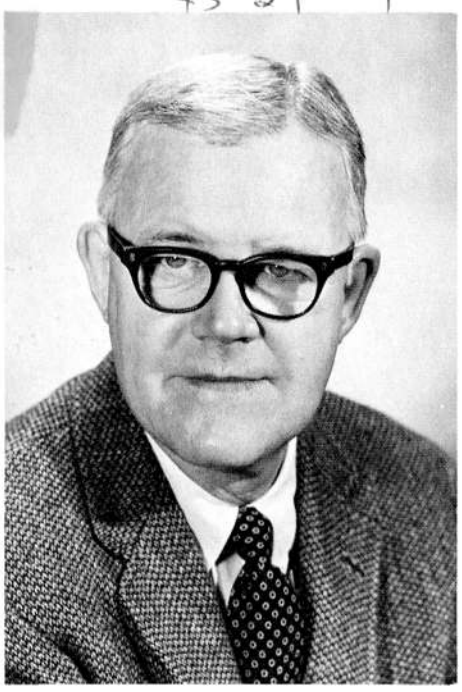
RIDE from Burlington area, Knoxville, to North Portal, straight days. T.A. Chance, plant phone 3-5483, home phone Knoxville 546-7629.

RIDERS from West Town area, Knoxville, Kingston Pike to Cedar Bluff Road, to Middlebrook and Hardin Valley Road, to Oak Ridge Connector, to all portals, straight day. Jim George, plant phone 3-7277, home phone Knoxville 693-6217.

ORNL

FORM CAR POOL to The University of Tennessee, Knoxville, from Oak Ridge. Thursday evenings during Spring quarter. Doris Henegar, plant phone 3-6411, or Oak Ridge 482-4690.

David Barclay named Paducah's finance , budget superintendent



David D. Barclay

David D. Barclay has been named Superintendent of the Finance and Budget Division, according to Clyde C. Hopkins, Paducah Plant Superintendent.

Barclay, a native of Rockford, Ill., is a graduate of the University of Michigan. He was National Athletic Association Golf Champion in 1947, and is still active in local golf.

He and his wife, Frances, live at 301 South 17th Street in Mayfield, Ky. They have two sons: Robert, who is presently an architect with the Peace Corps in Dahomey, Africa; and John, a graduate of the University of Michigan, is attending the Princeton Theological Seminary.

Calendar of EVENTS

TECHNICAL

March 13

Chemical Technology Division Seminar: Transfermium Chemistry: "One-Atom-at-a-Time Chemistry," W. J. McDowell. Central Auditorium, Building 4500N, 3 p.m.

Mathematics Research Seminar: "Convergence of the Discrete Ordinates Methods for the Approximate Solution of the Transport Equation: History and Prospectus," Philip M. Anselone, Oregon State University. Conference Room, Building 9704-1, Y-12 Plant, 3 p.m.

March 14

Gas-Cooled Reactor Programs Bimonthly Information Meeting: "Developments in Uranium Loading of Ion Exchange Resins," J. H. Shaffer; "Carbonization and Coating of Resin-Derived Fuels," R. L. Beatty; "Summary of Metallic Fission Product Release Studies," M. T. Morgan; "Passive and Active Techniques for HTGR Fuel Assay," J. D. Jenkins. East Auditorium, 4500N, 9 a.m.

March 15

Biology Division Seminar: "Do Bispecific Cells Produce One or Two Different Antibody Molecules?" P. Liacopoulos, Institut d'Immuno-Biologie, Hopital Broussais, France. Tower I Conference Room, Building 9207, Y-12, 3 p.m.

March 21

Metals and Ceramics Division Seminar: "Positron Annihilation Studies of Voids in Neutron Irradiated Aluminum Single Crystals," J. D. McGervey, Case Western Reserve University. East Auditorium, Building 4500N, 2:45 p.m.

COMMUNITY

March 8

Oak Ridge Playhouse presents: "The Play's the Thing." Playhouse 8:20 p.m. Admission: Adults $2.50; students $1.25, Fridays only. Other performances March 9, 15 and 16.

ST. PATRICK'S DAY DANCE

There is still time to make reservations to attend the 24th annual St. Patrick's Day Dance sponsored by ORNL's Chemical Technology Division.

The dance will be held March 15 at the Legion Hall in Oak Ridge. A reception at 8 p.m. will be followed by dancing to music provided by "The Nineteenth Amendment." Door prizes and other entertainment will also be provided.

For reservations contact Ed Brantley, 3-6756, or Frank Soard, 3-1769. Admission is $3.50 per person.

March 9

Oak Ridge Civic Music Association presents: Rhenish Chamber Orchestra of Cologne. Robertsville Junior High School, 8:15 p.m. Admission: Adults $5; students $2.50.

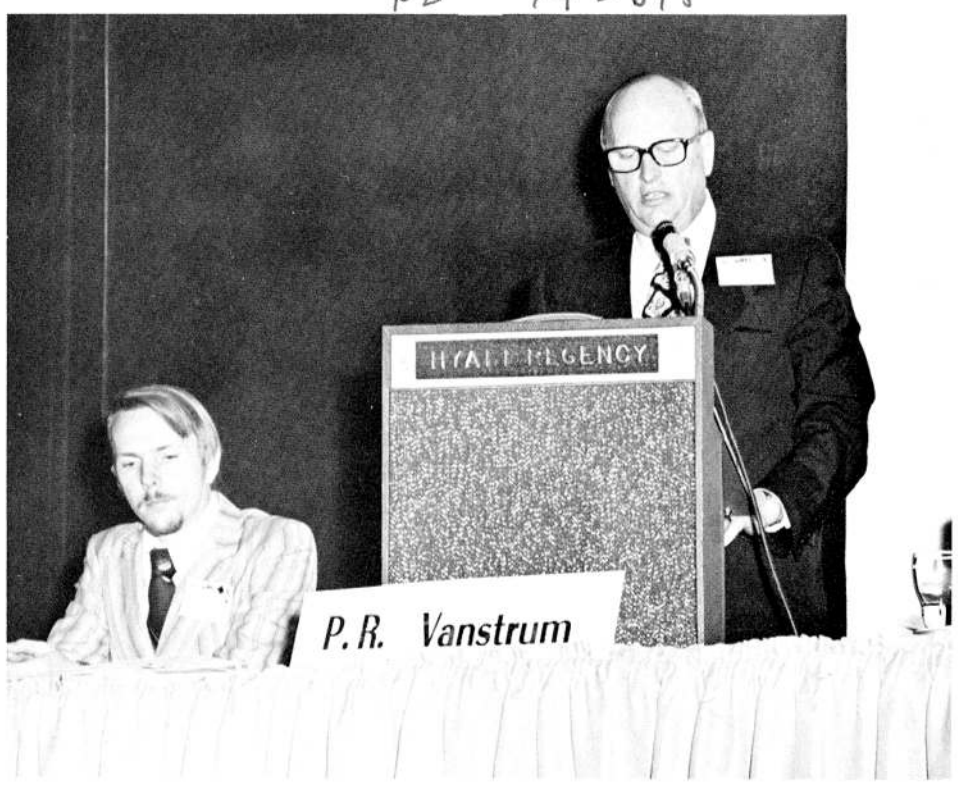
March 10

Oak Ridge Chapter of Hadassah presents: World Child's Day Concert - Youth Alujah. Civic Center, Rooms A and B, 2:30 p.m. Admission: Adults $1.50; students $1.

March 17

Art Center Film Club presents: "The Savages" and a short called "Henry." Jefferson Junior High School, 8 p.m. Admission: Adults $1.50; students $1.

Kiwanis Clubs present: Travel and Adventure Series, "Alaska." Oak Ridge High School Auditorium, 3:30 p.m. Admission: Adults $2; students $1.



KEYNOTE ADDRESS — Paul R. Vanstrum, Nuclear Division Vice-President, gave the keynote address for the Welding and Testing Technology Exhibition and Conference held during Engineers' Week. At left is Fred D. Mundt, Technical Division, who served as WATTec program chairman.

Vanstrum: 'team effort needed in long-term energy problem'

Nuclear Division Vice-President, Paul R. Vanstrum, in his keynote address to the Welding and Testing Technology Exhibition and Conference (WATTec), called for a team effort in coping with the nation's energy crisis.

He told the conference attendees that the energy crisis will likely be with us for some time, and will continue to grow in magnitude in future years. He cited an estimate by the Federal Power Commission that power utilities in this nation must add four times the present power capacity within the next 30 years.

Vanstrum said that the answer to the crisis does not lie in placing severe restrictions on population growth nor in making drastic revisions in living standards throughout our nation and world, but rather in making the optimum economic use of available energy resources, including nuclear energy. To do this, he continued, we need an aggressive, coordinated, interdisciplinary team effort to provide a broad and properly balanced approach.

Vanstrum cited the U. S. space program, the development of the nation's nuclear facilities during the war years of the 1940's, and the development of the zonal centrifuge equipment at the Molecular Anatomy (MAN) Program at ORNL as outstanding examples of interdisciplinary efforts to accomplish a mission.

"An important part of this approach," he stressed, "is getting the message across to the public. Our solutions to various problems may be valid, but if we can't communicate these solutions to the public and obtain their support, we are going to have problems."

He praised the spirit of the WATTec meeting, in which government, industry, education and professional societies combined for a good exchange of ideas and technical information.

The WATTec conference was sponsored by the Northeast Tennessee Section of the American Welding Society and the Oak Ridge Section of the American Society for Nondestructive Testing, and was presented in concert with 16 other professional engineering and technical societies in the Knoxville-Oak Ridge area participating in Engineers' Week Activities. Nuclear Division employees are well represented in most of these organizations.

The conference was attended by 450 persons from throughout the United States, including four national society presidents - John P. Battema, ASNT; J. Edward Dato, AWS; W. Spence Bloor, ISA; and Dean K. Hanink, ASM. In addition to the conference, which consisted of 20 speakers during the two-day program, 31 companies had exhibits in the lobby of the Hyatt-Regency.

WATTec chairman Fred D. Mundt, of UCC-ND, said that the vocational, education and manpower sessions were very productive in alerting the national society presidents to needs in the employment training field.

The conference concluded with a banquet, at which AEC Chairman Dixy Lee Ray was the main speaker.

UNION CARBIDE EXHIBIT — The Nuclear Division's Industrial Cooperation exhibit was one of 31 displays at the WATTec program held at the Hyatt-Regency in Knoxville February 21-22.

Chairman Dixy Lee Ray welcomes newsmen to Oak Ridge Gaseous Diffusion Plant

Division Deaths

William N. Berry, Oak Ridge Gaseous Diffusion Plant's Maintenance Division, died February 23, in the Harriman Hospital.

A native of Scottsboro, Ala., Mr. Berry joined Union Carbide in 1944.

Mr. Berry

Survivors include his wife, Zada Chambless Berry, 106 Viola Lane, Oak Ridge, and two grandsons. Mr. Berry is also survived by his mother, Mrs. Margaret McCormack, a sister and two brothers.

Funeral services were held at the Henshaw Funeral Home, Scottsboro, with burial in that city.

Oliver C. Wright, a 29-year veteran in the Oak Ridge Gaseous Diffusion Plant's Maintenance Division, died February 13, in the Oak Ridge Hospital.

Mr. Wright

The Wright home is on Swan Pond Road, Route 4, Harriman, where his wife, Mrs. Cecile Wright and daughter, Marianna, survive. Also surviving are sons, Daniel and Timothy, his mother, Mrs. Virginia B. Wright, two brothers and a sister.

Funeral services were held at Trent Street Baptist Church, with the Rev. Frank Hall officiating. Burial followed in Roane Memorial Gardens.

Commissioner Ray welcomes newsmen to view facility

"A lion's share of production of electricity between now and the end of the century must shift to coal and nuclear," Dixy Lee Ray, Chairman of the U. S. Atomic Energy Commission, told some 40 newsmen touring the Oak Ridge Gaseous Diffusion Plant, recently. It was the first time newsmen were allowed a look inside a gaseous diffusion process, as they viewed a sample cell.

"With regard to the use of nuclear power, there is a tremendous dedication, both in this country and abroad, to nuclear power - a commitment which promises to grow to something in the range of 500,000 MW by 1990. In some cases, such as right here in the Tennessee Valley, the commitment to nuclear is essentially absolute," Chairman Ray told the men and women representing news media from all over the country.

Media representatives came from newspapers across the country, radio, television and technical periodicals. Some 40 journalists attended the briefings along with Atomic Energy Commission officials and Union Carbide personnel.

After viewing the Toll Enrichment Facilities at ORGDP, the chairman held a news conference.

Union Carbide hosted a luncheon for the newsmen after the news conference.

Environmental director named to energy board

Stanley I. Auerbach, director of the Environmental Sciences Division at the Oak Ridge National Laboratory, has been appointed to the newly constituted Board on Energy Studies of the National Research Council.

1494-71

Auerbach

The Board on Energy Studies is a joint activity of the National Academy of Sciences and the National Academy of Engineering, and is organized within the Commission on Natural Resources. One of its responsibilities is to develop energy-related information for use by the Academies in advising the executive and legislative branches of the Federal government.

The Board is also responsible for recommending the establishment of committees which will undertake specialized studies on energy matters, and for coordinating the energy activities of other divisions in both Academies.

Joined ORNL in 1954

Auerbach, who earned the Ph.D. degree in ecology from Northwestern University, joined the staff at ORNL in 1954.

Among his professional activities, Auerbach directs a major National Science Foundation program concerned with the analysis of ecological systems on the Continental United States. This program involves some 1,000 scientists working in various research institutions and universities across the country. It is the first integrated cooperative large-scale ecosystem analysis project of its kind.

Auerbach is a Fellow of the American Association for the Advancement of Science and is listed in Who's Who in America. He also holds membership in several professional societies.

Joanne Gailar to coordinate ORNL's 'affirmative action'

Mrs. Joanne Gailar, formerly of the civil defense research section, has been appointed ORNL Affirmative Action Coordinator. She replaces Earl J. Nash who recently transferred to the Nuclear Division Central Employment Office.

Mrs. Gailar joined ORNL in 1965 and has worked since that time in civil defense research, except for a one-year assignment as an editor in the ORNL-NSF Environmental Program. In accepting her new assignment, Mrs. Gailar became a full-time employee, reporting to J. A. Barker, Director of Personnel.

UT graduate

She is a University of Tennessee English graduate, and has also completed all the course work necessary for a major in psychology and a minor in sociology at Newcomb College.

In the course of her past work at ORNL, Mrs. Gailar has established a reputation as an expert on Soviet civil defense research and planning and has written and lectured widely on the subject. With co-editors C. H. Kearny and C. V. Chester, she edited and wrote the preface to two huge English translations of Soviet civil defense handbooks, the publication of which has influenced U. S. civil defense policy.

Mother of three

Mrs. Gailar was active in the Oak Ridge League of Women Voters and served on its Board of Directors for three years. She is the mother of three. Her husband, Norman Gailar, is a University of Tennessee professor.

In her new position, Mrs. Gailar becomes a part of a large Nuclear Division affirmative action organization, headed by Charles Blake, which has been developed to assist management in implementing, monitoring and reporting on the affirmative action program. Each of the four Nuclear Division installations has an affirmative action coordinator. In addition, each division of the Laboratory has at least one affirmative action representative who works closely with his division director in carrying out affirmative action goals.

3936-72

Joanne Gailar

"Since it is primarily at the division level that affirmative action objectives must be met, I plan to work closely with the division directors and their representatives," she said. "I want to make sure that each division director understands the affirmative action program and his responsibilities for making it work."

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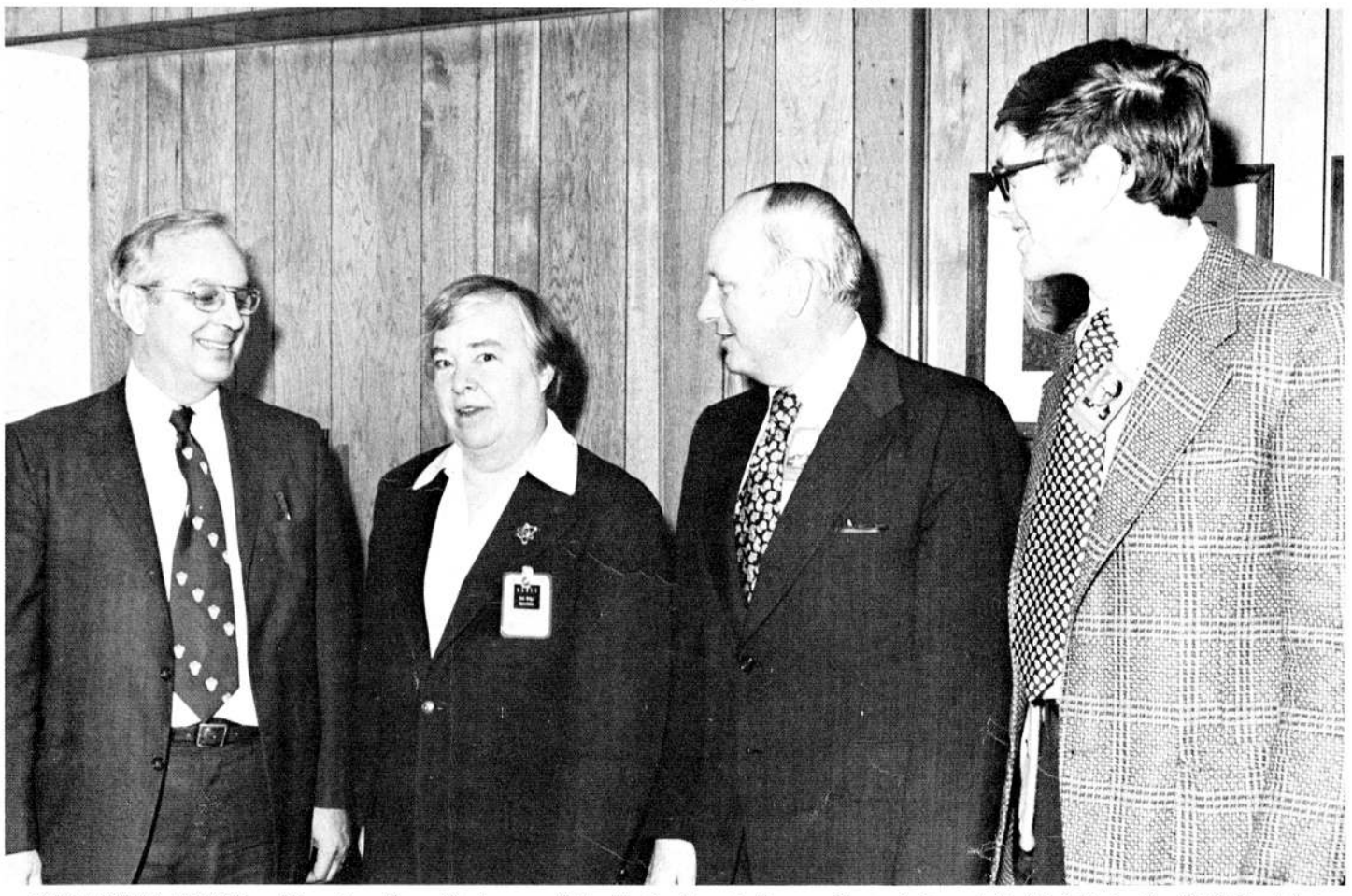


CHAIRMAN VISITS — Dixy Lee Ray, Chairman of the U. S. Atomic Energy Commission, visited briefly in the Y-12 Plant last week on her third trip to the Oak Ridge area. From left are, Floyd L. Culler Jr., deputy director of Oak Ridge National Laboratory; Chairman Ray; Paul R. Vanstrum, Nuclear Division Vice-President for Engineering and Development; and Herman Postma, director of ORNL. Chairman Ray greeted approximately 40 newsmen earlier in the day at the Oak Ridge Gaseous Diffusion Plant.

FEBRUARY WINNER — "Ron" won the Carbide Camera Club's February competition for open prints in black and white. "Ron" is a result of work by Terry Domm.

CARBIDE CAMERA CLUB

The Carbide Camera Club will hold its next monthly meeting on March 12 at 7:30 p.m. in Room D-213 of Cheyenne Hall, which is opposite the Mental Health Center on Tyrone Road. At the meeting, a film showing the winners of the 1970 Kodak Teen-Age Movie Competition will be presented. The March competition will be color slides: portraits and people.

The Club regularly meets on the second Tuesday of each month. At each meeting, there is an informative program dealing with methods for improving photographic quality as well as the technical aspects of the proper exposure of film, developing and printing. Each month a competition is held - color slides or color and black and white prints in a number of different categories. Each November, the Club sponsors the annual Carbide Camera Club Salon, a competition judged by local amateur and professional photographers and artists.

Workshops planned for this year include black and white exposure, and color and black and white darkroom courses. Members of the Club have access to a darkroom equipped with numerous items necessary for most photographic techniques.

Any employee interested in photography may become a member. The dues are $3 per year. Carbide Camera Club meetings are open to the general public. This year's president is John Blankenship, extension 3-3533.

Y-12 BOWLING

The Rollmasters and Rounders are locked in deadly competition for the top rung of the C League. The Rounders' Walt Goodwin rolled a 657 scratch series of late. The Royal Flush claims second place, three points behind the leaders.

The Classic League also belongs to two teams, or at least the current lead does . . . as the Has Beens and Mets stand two points ahead of the Bumpers and Markers. Jay Sewell's 235 game is high in rolling.

The Alley Cats commend a rather weak lead in the Y-12 Mixed League, one ahead of the Hits & Misses. Loyd Spray's 264 handicap game holds high thus far.

ORGDP BOWLING

The Atoms are still high in Tuesday League standings, from ORGDP. They are only an inch in front of the Double X team. C. L. Butcher is the star of the league, with a single of 254, a series of 606!

The Sandbaggers are a little ahead of the Protectors in the Wednesday League, with the Amps and Planners two behind the second-place team. E. V. Bogle and C. L. Lawson are tied for honors, with a 239 game under their belts.

The ORGDP Women's League lead still goes to the Uptowners, three points ahead of the Pinups. Myrtle Cowan's 506 series was high recently, boosted to a 623 series, with handicap added.

BASKETBALL LEAGUE

Two teams in the Atomic League still boast only one-loss in their scheduled play. In the Nuclear League, it's the Wildcats still with two losses.

League standings follow:

ATOMIC LEAGUE

Team	W	L
Has Beens	16	1
G B U's	14	1
Testers	11	5
Bombers	10	4
Grundy Express	9	7
Underdogs	6	9
Electrodes	5	11
Possum Soup	4	11
73'ers	2	10

NUCLEAR LEAGUE

Wildcats	12	2
COE	11	3
Bottlenecks	10	3
Rolling Bones	10	3
Chi-Town Hustlers	8	7
The Gunners	4	9
H—Shift	5	9
Just-For-Fun	4	11
Isomets	4	11
Eco-Trolls	3	11

DENTON IS ARMA SPEAKER

James K. Denton, Manager of Accounting for the Nuclear Division, will speak March 12, at the East Tennessee Chapter of the American Records Management Association. He will discuss "A Manager of Accounting's View of Business Records." The meeting will be held at 6:30 p.m. at the Family Inn, I-40 at Lovell Road.

RECREATIONOTES

VOLLEYBALL LEAGUE

The Pack still dominates play in the Volleyball League, having lost only one game to this point.

League standings follow:

ATOMIC LEAGUE

Team	W	L
Pack	26	1
Hawks	30	3
The Gang	20	7
Taxi Squad	17	10
Old Men	14	16
The Quarks	11	19
Funky Wambats	10	20
Electric Bananas	8	22
Jokers	6	24
Rad-Fizz	9	27

NUCLEAR LEAGUE

Over-The-Hill Gang	29	4
Pogo's	31	8
Newcomers	23	10
Anti-Quarks	19	11
Bawlers	18	15
Sloths	15	15
Bombers	14	13
Artie's Army	14	19
The Neutrals	8	28

HIGH POWERED RIFLE LEAGUE

The first match of the All Carbide High Power Rifle League will be held on Saturday, March 30. Subsequent matches will be held April 27, May 11, June 1, June 29, and July 13.

All of the matches are on Saturday, and firing will start at 9 a.m. Interested shooters should contact the Recreation Department.

ORNL BOWLING

The Ten Pins maintain a thin lead over the ORAU team in the A League, only three points out front. Ken Thomas holds the record high scratch game, with a 225 score. Paul Gnadt has a 299 handicap game to his credit!

The C League belongs to the Be-Bops, a point and a half away from the Pin Heads. Rufus Caldwell's 213 game was high recently . . . N. W. Hills 633 series.

Tillie Plaza rolled an all spare game of 177 recently in the Carbide Family Mixed League. The Oops team still maintains its lead, as Carolyn Williams won a triplicate patch for three games with the same score.

The ORNL Ladies League lead stays with the Pick-Ups, as the Mousechasers move closer. Georgia Guinn rolled a 226 scratch game recently.

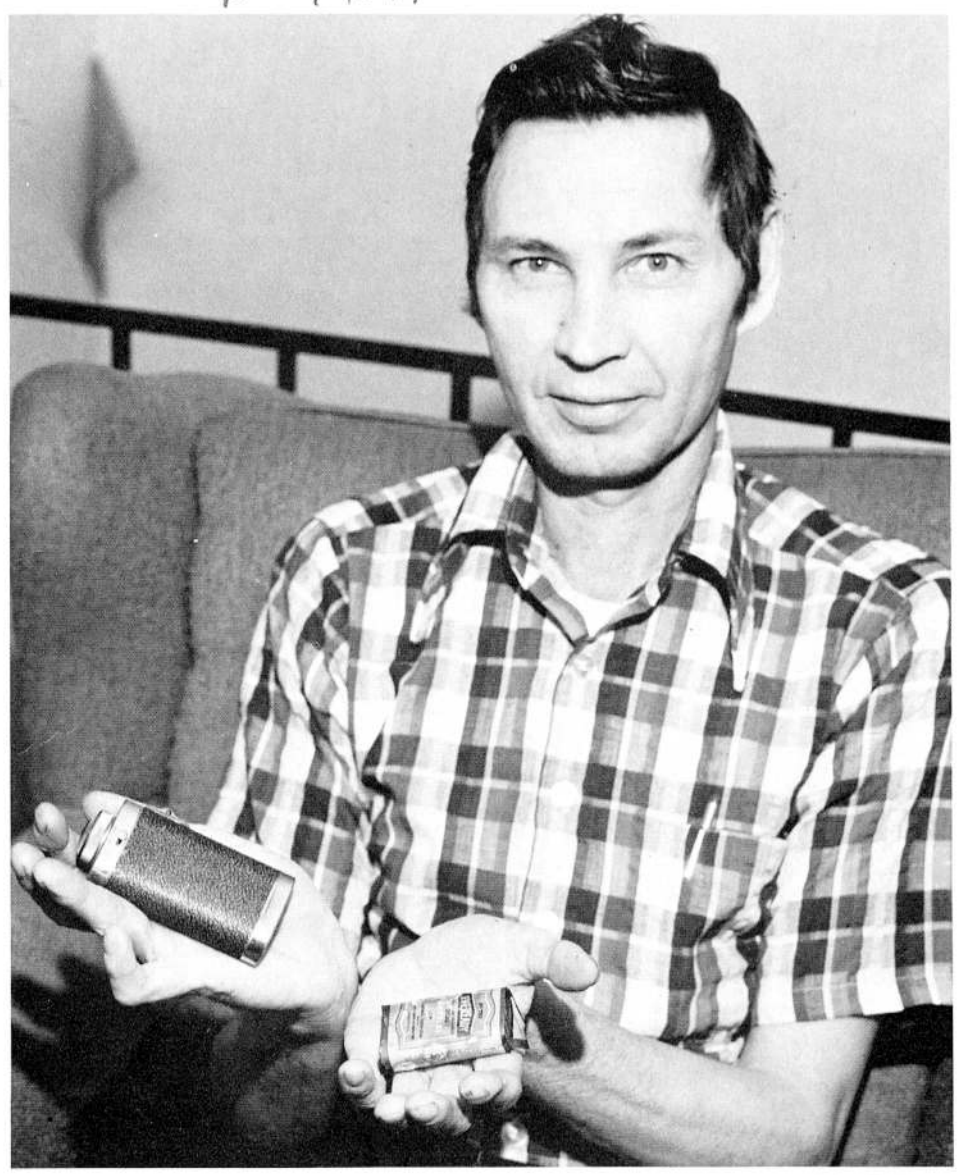
BADMINTON

Informal badminton competition for Nuclear Division enthusiasts begins tonight, March 7, at the Highland View gym. Play begins at 6:30, and equipment is available free.

SKEET LEAGUE

Jack M. Case topped recent Skeeters in firing, scoring a 48.339, to best the field. Walt Goodwin came in second with 48.240, as R. Williams swept the field, to make Y-12ers the top three firing aces, with a 47.760.

N 74-17



ANCIENT FLASHLIGHT — David Hunt, 116 Lynnwood Lane, Oak Ridge, recently uncovered this vintage Eveready flashlight, complete with battery. Hunt estimates the light to be more than 40 years of age. It's magnifying glass front pinpoints light from the handsome leatherette frame. The battery doesn't work, naturally. But what Hunt wants to know is can the battery be replaced?

The Medicine Chest

(Editor's Note: Dr. Lincoln alternates his regular column with "The Medicine Chest," where he answers questions from employees concerning their health in general. Questions are handled in strict confidence, as they are handled in our Question Box. Just address your question to "Medicine Chest," NUCLEAR DIVISION NEWS, Building 9704-2, Stop 20, or call the news editor in your plant, and give him your question on the telephone.)

By T. A. Lincoln, M.D.

QUESTION: "What is the informed medical opinion of Dr. Atkins' low carbohydrate reducing diet? His book, *Dr. Atkins' Diet Revolution,* reads like he has found a miracle. Anything to it?"

ANSWER: The sources of "informed medical opinion" which I consulted were *A Critique of Low Carbohydrate Ketogenic Weight Reduction Regimens - A Review of Dr. Atkins' Diet Revolution,* prepared by the AMA Council on Foods and Nutrition and an analysis published in the *Medical Letter on Drugs and Therapeutics,* a nonprofit publication.

Dr. Atkins advocates an unrestricted intake of protein and fat and a very low intake of carbohydrate. He claims that with his diet there need be no reduction in calories and even claims that obese subjects can still consume 5,000 calories or more a day and lose weight. Weight is lost in the form of ketones, incompletely burned fat, and by the production of a fat mobilizing hormone.

Dr. Atkins apparently believes he has found a way of beating some basic principles of physiology. He claims that unlimited intake of calories, providing they are fat or protein, will still cause weight loss. Unfortunately, body fat is lost only when calorie expenditure exceeds calorie intake. Calories are burned to produce heat and energy in the body, and are also lost as heat in the breath, sweat, urine and feces. His diet does not cause calories to be burned at a higher rate. The amount of calories lost on Dr. Atkins' diet is not more than 100 calories a day. His diet does promote loss of sodium and water from the body, which can produce a temporary, but dramatic weight loss. A fat mobilizing hormone has never been unequivocally identified in humans.

The reason people lose weight is because they eat less calories. The average American diet is 45 percent or more carbohydrate. If one drastically reduces that percentage, he cannot easily make it up with fat or protein. A high fat diet also causes initial nausea, dehydration and fatigue, and a general reduction in appetite on prolonged use. During World War II, the Canadian Army conducted a study of the effect of a diet exclusively consisting of pemmican (dehydrated beef with suet added), which was 70 percent fat and 30 percent protein and almost no carbohydrate. The troops' performance deteriorated so rapidly that they were virtually incapacitated in three days. On such a diet adjustments occurred later, but initially the effect was devastating. In another study, two men maintained their body weight for one year subsisting exclusively on 2000 - 3000 calories of lean and fat meat each day. Obviously there is no magic in a high fat low carbohydrate diet. In Africa, many people stay lean on high carbohydrate low fat diets, so it is the total calories consumed which are most important.

Dr. Atkins' diet is hazardous because it may raise the serum cholesterol to an extremely high level. In one of the two men on the exclusive meat diet mentioned above, his cholesterol went up to 800 mg/100 ml. (Normal should be less than 260.) Many patients develop high serum uric acid levels and if they have any tendency to gout, they may have severe attacks of gouty arthritis. The diet may cause rhythm disturbances in the heart and may cause fainting spells. The common production of nausea, fatigue, and bad breath (due to the ketones) is not hazardous but may be unpleasant.

Dr. Atkins' ideas are not new. About every five years, someone publishes another book covering the same old ground. If you want to lose weight and need a gimmick, why don't you join one of the weight reducing groups? By investing some of your hard-earned cash to get sensible dietary and psychological support, maybe you will be motivated to make the necessary effort.

QUESTION: "Is there anything that can be done for poor circulation in the feet and ankles?"

ANSWER: Do you really have poor circulation? Has any physician told you that you have peripheral vascular disease? Do you have cramps in your calf or your foot when you walk? Are the pulses in the arteries which supply blood to your feet OK, or are they diminished or absent? If you have obstruction in the arteries due to atherosclerosis, you may be able to get help with surgery. Regardless, you will need a careful evaluation and your physician can guide you to the proper specialist.

Chances are that you just have cold feet. You probably also have cold hands. There doesn't appear to be any good answer to this problem. Some people seem to have their internal thermostats set low and they are cold much of the time. One thing that helps is regular exercise. It stimulates the flow of blood to the extremities and may thereby open little-used blood vessels and keep your feet a little warmer, even when you are not active. When you are cold why don't you run in place for five minutes? You might also try wearing sweat socks in bed at night, or putting your feet on your spouse's back. Fortunately, people with cold hands and feet often have warm hearts, so your blood is being kept where it really counts!

NOTE: Thank you for the many questions. Keep them coming!

Health Physics post goes to Mrs. Carver

The appointment of Jeanne S. Carver as administrative assistant has been announced by John Auxier, director of the Health Physics Division at ORNL.

Mrs. Carver, a native of Knoxville, worked as secretary to the director of Health Physics for 12 years, before her recent appointment. She previously worked in patent offices in Washington, D.C., and at AEC-ORO.

In addition to other duties at ORNL, Mrs. Carver has served as the Division's affirmative action representative. She is involved in various conservation activities, and has been conservation director for the Wilderness Society for four years. Mrs. Carver, who is working on a business degree at The University of Tennessee, also operates a collector's prints gallery in her home.

Mrs. Carver's husband, Don, works in the Development Division at Y-12. They reside at 7440 Glastonbury Road, Knoxville.

Mrs. Carver

Division Retirees

Five additional employees retired from the Oak Ridge National Laboratory March 1.

Cheka

Ault Brown

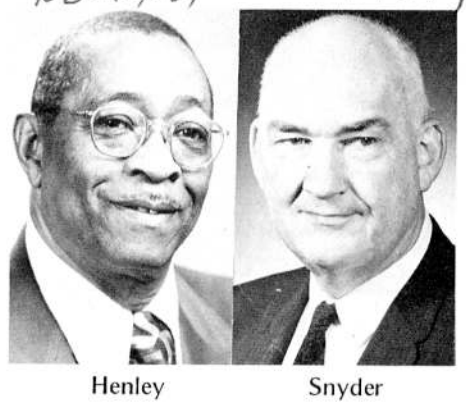
Charlie S. Ault, Finance and Materials Division, retired with over 29 years of company service. He has made no rigid plans, but will "let every day look out for itself." Ault does hope to get in some fishing and gardening. He and Marie, his wife, live at Route 2, Harrison Hills, Lenoir City.

Pleny E. Brown retired from the Health Physics Division with over 28 years of service. His plans following retirement include visiting his daughter in Potsdam, N.Y., and taking his sailboat on a Florida vacation trip. He and his wife, Grace, live at 128 Orchard Lane, Oak Ridge.

Joseph S. Cheka was a research staff member in the Health Physics Division. His plans include doing some maintenance work around his home, increasing his gardening activities and, possibly, doing some consulting work. Cheka and Dorothy, his wife, have three children. They live at 4710 Middlebrook Pike, Knoxville.

Garner W. Henley retired with over 21 years of company service from the Biology Division. His retirement plans include fishing, gardening and managing little league and older boys' baseball teams. His wife, Alberta, continues to work in the Biology Division. They reside at 501 Cedar Street, Loudon.

Walter S. Snyder was a technical program director in the Health Physics Division. For three months following retirement, Snyder will teach a graduate course in health physics and do research at the Instituto D'energia Atomica in Sao Paulo, Brazil. He and Irene, his wife, have two children. Their home is at 7017 Nubbin Ridge Road, Knoxville.



Henley Snyder

A sense of humor is what makes you laugh at something you'd get mad at if it happened to you.

COMPANY Service 20 25 30

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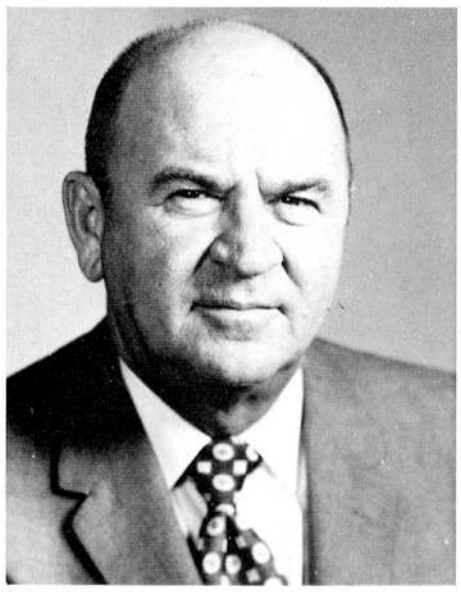
Y-12 PLANT
35 YEARS



Edward A. Pluhar

March 1 marks Edward A. Pluhar's 35th anniversary with Union Carbide. He joined the ranks at the Bound Brook, N.J. plant, then known as part of the Bakelite Division, now called Plastics Division.

Pluhar came to Oak Ridge in early 1944 by an unusual mode of transportation, a charcoal-burning station wagon! He later transferred to the Y-12 Plant, and presently heads up the Materials and Services Division.

He and Annamarie live at 312 Seven Oaks Trail, Concord. They have two married children, Penny McReynolds and Kenneth, and eight grandchildren.

The Old-Timer is the only 35-year veteran this year in the Nuclear Division.

30 YEARS

Five well-known Y-12ers cross their 30th anniversary with Union Carbide during early March.

Clarence E. Johnson, head of the safety department, is a native of Ellijay, Ga. He and his wife, Elizabeth, who also works in Y-12, live at 406 Virginia Road, Oak Ridge. He is a professional member of the American Society of Safety Engineers.

George W. Evans, head of the Shift Superintendents and Utilities Division, was born in Twinton, Overton County, Tenn. He and his wife, Gladys, live at 106 Norman Lane, Oak Ridge. He also owns his old family place near Crossville.

Charles K. Greene, a material planner in buildings, grounds and maintenance shops, was born in Rome, N.Y. He lives at 125 South Alabama Road, Oak Ridge.

Oscar M. Blackwell, a native of La-Cross, Va., is a graduate of Emory University. He is in Y-12's utilities, and lives at 110 Norton Road, Oak Ridge.

Dora Dell Bagwell, nee Wood, lives at 8115 River Drive, Oak Ridge. A native of Chatsworth, Ga., she is a process operator in chemical services department.

25 YEARS

Dell C. Reed and Edgar Reagan.

20 YEARS

Paul R. Wilson, Charles R. Brazda, Hubert Y. Rollen, Russell T. Goodpasture, John Baird, Ernest R. Martin, Eugene M. Miller, Ralph M. Meade, Thomas J. Todd, Floyd L. Teno, Leland D. Grice, Harold N. Brendle, Leonard C. Miller, Elmer Sharp, Ralph E. Humphries, Charles D. Ward Sr., John R. Davis, Jake K. Johnston, Hubert W. Henley, Frank D. Lively.

ORGDP
30 YEARS

Charles C. Littlefield Jr., a native of Brooklyn, N.Y., is in the Engineering Division. He lives at 1215 Dogwood Lane, Oak Ridge.

Paul H. Spence, a guard in the guard department, was born in Jacksonville, Fla. He lives at Route 2, Powell.

Andrew W. Melton, a maintenance mechanic in the shop services department, lives at Route 3, Harriman. He was born at Crossville.

Charles C. Fowlkes, production engineer in the utilities operating department, was born in Harriman, and lives at 110 Canterbury Road, Oak Ridge.

William S. Lenihan Jr., a native of Boston, Mass., is a design specialist in the Engineering Division. He lives at 105 Willow Lane, Oak Ridge.

Richard C. Walz, III, born in Harriman, is an instrument mechanic in the power and utilities department. He lives at Route 3, Lawnville Road, Kingston.

Clyde T. Bolen, a native of Canton, N. C., is a lubricating foreman in the mechanical services department. He lives at 114 Miramar Circle, Oak Ridge.

Comer W. Tays, born in Killen, Ala., lives at 114 Orchard Lane, Oak Ridge. He is presently in the Oak Ridge area electrical distribution department.

20 YEARS

Shirley S. Yaggi, Larry N. Moncier and Ralph H. Christenberry.

PADUCAH
30 YEARS

William T. Childress transferred to the Paducah Plant in 1951 from the Oak Ridge Gaseous Diffusion Plant. He worked with Atlas Powder Company before joining Union Carbide in 1944. He presently lives at 2507 Madison Avenue, Paducah.

30 YEARS
ORNL

Richard L. Macklin, Physics; John P. McBride, Chemical Technology; John W. Prewitt, Plant and Equipment; Edward J. Witkowski, Operations; Benjamin Harmatz, Physics; and Gerald J. Dixon, Operations.

Claude F. Keck, Chemical Technology; Earl J. Henry, Plant and Equipment; L. Josephine Brown, Health Physics; Fred J. Hurst, Chemical Technology; and Fletcher L. Daley, Chemical Technology.

Homer G. Hunter, Isotopes; Delbert G. Davis, Instrumentation and Controls; Harold B. Greene, Isotopes; Robert L. Knight, Information; and Sam A. Reynolds, Analytical Chemistry.

25 YEARS

Daphne F. Dinsmore and R. L. Neubert Jr.

20 YEARS

Edward D. Hill, Kermit J. Fletcher, Mack W. McGuffin, Robert E. Worsham, Louie A. Massengill, Ralph Payne, Arlis V. Jones, Harry A. Todd, Alfred L. Sutton Jr. and Neal E. Dunwoody.

Truman M. Lewis, Cordie W. Holland Jr., Lawrence Dresner, Frank B. Robertson, Roy L. Simpson, Annie S. Angel, Kurgus C. Lannom Jr., Phillip R. Navas and Joanne S. Sanford.

QUESTION BOX ? ?

(Continued from page 1)

would rather see the money go for one multi-thousand dollar prize than 358 little prizes.

ANSWER: The Safety Incentive Plan provides that upon the completion of an awards period (injury-free period of specified length at each installation) $2.00 per employee will be accumulated in the installation's General Fund to be retained for individual awards at the conclusion of the calendar year. Also, $2.00/employee is established in a Drawing Fund to procure awards for recipients as determined by a random drawing process. The plan provides that not more than 25% of the fund will be used for awards with values between $300 and $500; not more than 25% for awards with values between $100 and $300; and not less than 50% of the fund for items with values less than $100. The selection of the awards is made by the installation's Drawing Fund Awards Committee.

The committee at ORNL in January opted for all small awards (Savings Bonds) at the completion of the last awards period. This does not necessarily indicate that they will continue to do so. Your suggestion is being called to the attention of the Awards Committee.

QUESTION: If an hourly employee takes an official leave of absence from his job, perhaps for as long as several months, to perform a task for the city, county or state government, does he continue to accumulate seniority and/or company service while away from the job?

ANSWER: If an employee is absent on an official leave of absence for as long as several months for the reasons listed, he accumulates company service credit for the first three months only (unless otherwise authorized by management). An hourly employee's seniority will depend on the terms of the particular company-union contract involved.

QUESTION: My question is, if an employee with 20 years of service has to take permanent disability termination at age 55 to 59 years, and exercises the spouse option after July 31, 1973, when is the pension reduced? At time of disability termination, age 65, or death?

ANSWER: If an employee age 55 or older with 10 or more years' Company service terminates because of a total and permanent disability and elects the Surviving Spouse option, the option is in effect when the disability benefit starts. The reduction, however, will not take place until the terminated employee becomes eligible for a pension at age 65, or upon death, if earlier.

NOTE OF INTEREST

Nobel Peace Prize-winner Dr. Linus Pauling will be the featured speaker at the sixth annual symposium on Advanced Analytical Concepts for the Clinical Laboratory.

The symposium, which will be held March 14 and 15 at ORNL, will bring together about 150 of the nation's experts in clinical laboratory research and development.

Dr. Pauling, director of the Institute of Orthomolecular Medicine, Menlo Park, Calif., will speak at the dinner on March 14. His subject will be "Aging and Death."

Dr. Pauling is known for his theory that Vitamin C cures the common cold.

THE LAST WORD

Adam may have had his troubles, but at least he didn't have to listen to Eve talking about the man she could have married.

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